



#5

A-665B.ST25.txt
SEQUENCE LISTING<110> KOSTENIUK, PAUL
LIU, CHUAN-FA
LACEY, DAVID LEE

<120> MODULATORS OF RECEPTORS FOR PARATHYROID HORMONE AND PARATHYROID HORMONE-RELATED PROTEIN

<130> A-665B

<140> 09/843,221

<141> 2001-04-26

<150> 60/266,673

<151> 2001-02-06

<150> 60/214,860

<151> 2000-06-28

<150> 60/200,053

<151> 2000-04-27

<160> 170

<170> PatentIn version 3.1

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Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
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Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
35 40 45cac gaa gac cct gag gtc aag ttc aac tgg tac gtg gac ggc gtg gag 192
His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
50 55 60gtg cat aat gcc aag aca aag ccg ccg gag gag cag tac aac agc acg 240
Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
65 70 75 80tac cgt gtg gtc agc gtc ctc acc gtc ctg cac cag gac tgg ctg aat 288
Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
85 90 95ggc aag gag tac aag tgc aag gtc tcc aac aaa gcc ctc cca gcc ccc 336
Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro
100 105 110atc gag aaa acc atc tcc aaa gcc aaa ggg cag ccc cga gaa cca cag 384
Page 1

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Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro		
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Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr		
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Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val		
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115

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125

Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val
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Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
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Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
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Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
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Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
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Trp Leu Arg Lys Lys Leu
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Leu His His Leu Ile
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Gly Pro Asn Gly Gly
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20 25 30

Asn Phe Val Ala Leu Gly Ala Pro Leu Ala Pro Arg Asp Ala Gly Ser
35 40 45

Gln Arg Pro Arg Lys Lys Glu Asp Asn Val Leu Val Glu Ser His Glu
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Lys Ser Leu Gly Glu Ala Asp Lys Ala Asp Val Asn Val Leu Thr Lys
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Ala Lys Ser Gln

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Ser Val Glu Arg Met Gln Trp Leu Arg Lys Lys Leu Gln Asp Val His
20 25 30

Asn Phe Val Ser Leu Gly Val Gln Met Ala Ala Arg Glu Gly Ser Tyr
35 40 45

Gln Arg Pro Thr Lys Lys Glu Asp Asn Val Leu Val Asp Gly Asn Ser
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Lys Ser Leu Gly Glu Gly Asp Lys Ala Asp Val Asp Val Leu Val Lys
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Ala Lys Ser Gln

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<213> Homo sapiens

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Trp Leu Arg Lys Lys Leu Gln Asp Val His Asn Phe Val Ala Leu Gly
20 25 30

Ala Pro Leu Ala Pro Arg Asp Ala Gly Ser Gln Arg Pro Arg Lys Lys

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Glu Asp Asn Val Leu Val Glu Ser His Glu Lys Ser Leu Gly Glu Ala
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Asp Lys Ala Asp Val Asn Val Leu Thr Lys Ala Lys Ser Gln
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Asn Phe Val Ala Leu Gly Ala Pro Leu Ala Pro Arg
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Asn Phe Val Ala Leu Gly
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Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp Val His Asn
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Phe Val Ala Leu Gly
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Tyr Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
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Asn Phe

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Asn Tyr

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Asn Phe

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Ser Val Glu Arg Met Gln Trp Leu Arg Lys Lys Leu Gln Asp Val His
Page 13

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25

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Asn Phe

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Asn Tyr

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Ser Met Glu Arg Val Glu Trp Leu Arg Lys Leu Leu Gln Asp Val
 20 25 30

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			20					25					30		

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Trp	Leu	Arg	Lys	Lys	Leu	Gln	Asp	Val	His	Asn	Phe
			20					25			

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Trp	Leu	Arg	Lys	Lys	Leu	Gln	Asp	Val	His	Asn	Tyr
			20					25			

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			20					25			

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Phe	Met	His	Asn	Leu	Gly	Lys	His	Leu	Ser	Ser	Met	Glu	Arg	Val	Glu
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Trp	Leu	Arg	Lys	Lys	Leu	Gln	Asp	Val	His	Asn	Tyr
			20					25			

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Phe	Leu	His	Asn	Leu	Gly	Lys	His	Leu	Ser	Ser	Leu	Glu	Arg	Val	Glu
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Trp	Leu	Arg	Lys	Lys	Leu	Gln	Asp	Val	His	Asn	Tyr
			20					25			

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 <212> PRT
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<220>
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<400> 37

Cys Asn Gly Arg Cys
 1 5

<210> 38
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified bovine PTH

<400> 38

Phe Met His Asn Leu Lys His Leu Ser Ser Met Glu Arg Val Glu Trp
 1 5 10 15

Leu Arg Lys Lys Leu Gln Asp Val His Asn Tyr
 20 25

<210> 39
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 39

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25 30

<210> 40
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 40

Ser Val Ser Glu Ile Gln Leu Met His Asn Arg Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25 30

<210> 41
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>

<223> modified human PTH

<400> 41

Ser Val Ser Glu Ile Gln Leu Met His Asn Lys Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
20 25 30

<210> 42

<211> 30

<212> PRT

<213> Artificial Sequence

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<223> modified human PTH

<400> 42

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Arg Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
20 25 30

<210> 43

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

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<400> 43

Tyr Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
20 25 30

<210> 44

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTH

<400> 44

Ser Val Ser Glu Ile Gln Leu Leu His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Leu Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
20 25 30

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<210> 45
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> bovine

<400> 45

Ala Val Ser Glu Ile Gln Phe Met His Asn Leu Gly Lys His Leu Ser
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25 30

<210> 46
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified bovine PTH

<400> 46

Ala Val Ser Glu Ile Gln Phe Leu His Asn Leu Gly Lys His Leu Ser
 1 5 10 15

Ser Leu Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25 30

<210> 47
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> porcine PTH

<400> 47

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Ser
 1 5 10 15

Ser Leu Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25 30

<210> 48
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> rat PTH

<400> 48

Ala Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Ala
 1 5 10 15

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Ser Val Glu Arg Met Gln Trp Leu Arg Lys Lys Leu Gln Asp
20 25 30

<210> 49
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified rat PTH

<400> 49

Ala Val Ser Glu Ile Gln Leu Leu His Asn Leu Gly Lys His Leu Ala
1 5 10 15

Ser Val Glu Arg Leu Gln Trp Leu Arg Lys Lys Leu Gln Asp
20 25 30

<210> 50
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTH

<400> 50

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Leu Leu Gln Asp
20 25 30

<210> 51
<211> 29
<212> PRT
<213> Homo sapiens

<400> 51

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln
20 25

<210> 52
<211> 28
<212> PRT
<213> Homo sapiens

<400> 52

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu
20 25

<210> 53
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified PTH

<400> 53

Ser Glu Ile Gln Leu Leu His Asn Leu Gly Lys His Leu Asn Ser Leu
 1 5 10 15

Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25

<210> 54
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> bovine

<400> 54

Ser Glu Ile Gln Phe Met His Asn Leu Gly Lys His Leu Ser Ser Met
 1 5 10 15

Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25

<210> 55
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified bovine PTH

<400> 55

Ser Glu Ile Gln Phe Leu His Asn Leu Gly Lys His Leu Ser Ser Leu
 1 5 10 15

Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25

<210> 56
 <211> 24
 <212> PRT
 <213> Homo sapiens

<400> 56

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Glu
 1 5 10 15

Trp Leu Arg Lys Lys Leu Gln Asp

20

<210> 57
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 57

Leu Leu His Asn Leu Gly Lys His Leu Asn Ser Leu Glu Arg Val Glu
 1 5 10 15

Trp Leu Arg Lys Lys Leu Gln Asp
 20

<210> 58
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> bovine

<400> 58

Phe Met His Asn Leu Gly Lys His Leu Ser Ser Met Glu Arg Val Glu
 1 5 10 15

Trp Leu Arg Lys Lys Leu Gln Asp
 20

<210> 59
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified bovine PTH

<400> 59

Phe Leu His Asn Leu Gly Lys His Leu Ser Ser Leu Glu Arg Val Glu
 1 5 10 15

Trp Leu Arg Lys Lys Leu Gln Asp
 20

<210> 60
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified bovine PTH

<400> 60

Phe Leu His Asn Leu Trp Lys His Leu Ser Ser Leu Glu Arg Val Glu
 Page 22

1 5 10 15

Trp Leu Arg Lys Lys Leu Gln Asp
20

<210> 61
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> modified bovine PTH

<220>
<221> misc_feature
<222> (7)..(7)
<223> D amino acid

<400> 61

Phe Met His Asn Leu Lys Trp His Leu Ser Ser Met Glu Arg Val Glu
1 5 10 15

Trp Leu Arg Lys Lys Leu Gln Asp
20

<210> 62
<211> 86
<212> PRT
<213> Homo sapiens

<400> 62

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu Ile His
20 25 30

Thr Ala Glu Ile Arg Ala Thr Ser Glu Val Ser Pro Asn Ser Lys Pro
35 40 45

Ser Pro Asn Thr Lys Asn His Pro Val Arg Phe Gly Ser Asp Asp Glu
50 55 60

Gly Arg Tyr Leu Thr Gln Glu Thr Asn Lys Val Glu Thr Tyr Lys Glu
65 70 75 80

Gln Pro Leu Lys Thr Pro
85

<210> 63
<211> 34
<212> PRT
<213> Homo sapiens

<400> 63

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Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu Ile His
20 25 30

Thr Ala

<210> 64
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 64

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu Ile His
20 25 30

Thr Ala Glu Tyr
35

<210> 65
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 65

Ala Val Ser Glu Ile Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Phe Trp Leu His His Leu Ile Ala Glu Ile His
20 25 30

Thr Ala Glu Tyr
35

<210> 66
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 66

Tyr Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile
Page 24

1 5 10 15

Gln Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu Ile
 20 25 30

His Thr Ala
 35

<210> 67
 <211> 33
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 67

Ala Val Ser Glu His Gln Leu Leu His Asn Leu Lys Ser Ile Gln Asp
 1 5 10 15

Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu Ile His Thr
 20 25 30

Ala

<210> 68
 <211> 28
 <212> PRT
 <213> Homo sapiens

<400> 68

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
 1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
 20 25

<210> 69
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 69

Leu Leu His Asn Leu Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
 1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
 20 25

<210> 70
 <211> 28

<212> PRT
 <213> Artificial Sequence

<220>
 <223> modified PTHrP

<400> 70

Leu Leu His Asp Lys Gly Lys Ser Ile Asn Leu Leu Arg Arg Arg Phe
 1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
 20 25

<210> 71
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<220>
 <221> misc_feature
 <222> (6)..(6)
 <223> D amino acid

<400> 71

Leu Leu His Asp Leu Trp Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
 1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
 20 25

<210> 72
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified PTHrP

<220>
 <221> misc_feature
 <222> (6)..(6)
 <223> D amino acid

<400> 72

Leu Leu His Asn Leu Trp Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
 1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
 20 25

<210> 73
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
<223> modified PTHrP

<220>
<221> misc_feature
<222> (5)..(5)
<223> D amino acid

<400> 73

Leu His Asn Leu Trp Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe Phe
1 5 10 15

Leu His His Leu Ile Ala Glu Ile His Thr Ala
20 25

<210> 74
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> modified PTHrP

<220>
<221> misc_feature
<222> (5)..(5)
<223> D amino acid

<400> 74

Leu His Asn Leu Phe Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe Phe
1 5 10 15

Leu His His Leu Ile Ala Glu Ile His Thr Ala
20 25

<210> 75
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<220>
<221> misc_feature
<222> (6)..(6)
<223> D amino acid

<400> 75

Leu Leu His Asn Leu Trp Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
20 25

<210> 76
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 76

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu
 20 25 30

<210> 77
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 77

Ala Val Ser Glu Ile Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Phe Trp Leu His His Leu Ile Ala Glu
 20 25 30

<210> 78
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> human PTHrP with non-human N-terminal peptide

<400> 78

Tyr Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile
 1 5 10 15

Gln Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu
 20 25 30

<210> 79
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<220>
 <221> misc_feature
 <222> (12)..(12)
 <223> D amino acid

<400> 79

Ala Val Ser Glu His Gln Leu Leu His Asn Leu Phe Lys Ser Ile Gln

Asp Leu Arg Arg Arg Phe Phe Leu His His Leu Ile Ala Glu
20 25 30

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<210> 80
<211> 24
<212> PRT
<213> Homo sapiens
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<400> 80

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
1 5 10 15

Phe Leu His His Leu Ile Ala Glu
20

<210>	81
<211>	24
<212>	PRT
<213>	Artificial Sequence

<220>
<223> modified human PTHrP

<400> 81

Leu Leu His Asn Leu Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
1 5 10 15

Phe Leu His His Leu Ile Ala Glu
20

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<210> 82
<211> 24
<212> PRT
<213> Artificial Sequence
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<220>
<223> modified PTHrP

<400> 82

Leu Leu His Asp Lys Gly Lys Ser Ile Asn Leu Leu Arg Arg Arg Phe
1 5 10 15

Phe Leu His His Leu Ile Ala Glu
20

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<210> 83
<211> 23
<212> PRT
<213> Artificial Sequence
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<220>
<223> modified human PTHrP

<400> 83

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Leu Leu His Asp Leu Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe Phe
1 5 10 15

Leu His His Leu Ile Ala Glu
20

<210> 84
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> modified PTHrP

<400> 84

Leu Leu His Asn Leu Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe Phe
1 5 10 15

Leu His His Leu Ile Ala Glu
20

<210> 85
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> modified PTHrP

<220>
<221> misc_feature
<222> (5)..(5)
<223> D amino acid

<400> 85

Leu His Asn Leu Trp Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe Phe
1 5 10 15

Leu His His Leu Ile Ala Glu
20

<210> 86
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> modified PTHrP

<220>
<221> misc_feature
<222> (5)..(5)
<223> D amino acid

<400> 86

Leu His Asn Leu Phe Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe Phe
1 5 10 15

Leu His His Leu Ile Ala Glu
20

<210> 87
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<220>
<221> misc_feature
<222> (6)..(6)
<223> D amino acid

<400> 87

Leu Leu His Asn Leu Trp Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
1 5 10 15

Phe Leu His His Leu Ile Ala Glu
20

<210> 88
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTH

<400> 88

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Asn Phe

<210> 89
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTH

<400> 89

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Leu Leu Glu Lys Leu Leu Lys Lys Leu His
20 25 30

Asn Phe

<210> 90
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 90

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Ala Leu Ala Glu Ala Leu Ala Glu Ala Leu His
 20 25 30

Asn Phe

<210> 91
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 91

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Ser Leu Leu Ser Ser Leu Leu Ser Ser Leu His
 20 25 30

Asn Phe

<210> 92
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 92

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu His
 20 25 30

Asn Phe

<210> 93
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 93

Leu	Met	His	Asn	Leu	Gly	Lys	His	Leu	Asn	Ser	Met	Glu	Arg	Val	Glu
1				5					10					15	

Leu	Leu	Glu	Lys	Leu	Leu	Glu	Lys	Leu	His	Asn	Phe
			20					25			

<210> 94
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 94

Leu	Met	His	Asn	Leu	Gly	Lys	His	Leu	Asn	Ser	Met	Glu	Arg	Val	Glu
1				5					10					15	

Leu	Leu	Glu	Lys	Leu	Leu	Lys	Lys	Leu	His	Asn	Phe
			20					25			

<210> 95
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 95

Leu	Met	His	Asn	Leu	Gly	Lys	His	Leu	Asn	Ser	Met	Glu	Arg	Val	Ala
1				5					10					15	

Leu	Ala	Glu	Ala	Leu	Ala	Glu	Ala	Leu	His	Asn	Phe
			20					25			

<210> 96
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 96

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Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Ser
1 5 10 15

Leu Leu Ser Ser Leu Leu Ser Ser Leu His Asn Phe
20 25

<210> 97
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTH

<400> 97

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Ala
1 5 10 15

Phe Tyr Asp Lys Val Ala Glu Lys Leu His Asn Phe
20 25

<210> 98
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 98

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Thr Ala

<210> 99
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 99

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Lys Lys Leu His
20 25 30

Thr Ala

<210> 100
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 100

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Leu Ala Glu Ala Leu Ala Glu Ala Leu His
 20 25 30

Thr Ala

<210> 101
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 101

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ser Leu Leu Ser Ser Leu Leu Ser Ser Leu His
 20 25 30

Thr Ala

<210> 102
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 102

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu His
 20 25 30

Thr Ala

<210> 103
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 103

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Glu
 1 5 10 15

Leu Leu Glu Lys Leu Leu Glu Lys Leu His Thr Ala
 20 25

<210> 104
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 104

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Glu
 1 5 10 15

Leu Leu Glu Lys Leu Leu Lys Lys Leu His Thr Ala
 20 25

<210> 105
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 105

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Ala
 1 5 10 15

Leu Ala Glu Ala Leu Ala Glu Ala Leu His Thr Ala
 20 25

<210> 106
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 106

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Ser
 1 5 10 15

Leu Leu Ser Ser Leu Leu Ser Ser Leu His Thr Ala
 20 25

<210> 107
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 107

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Ala
 1 5 10 15

Phe Tyr Asp Lys Val Ala Glu Lys Leu His Thr Ala
 20 25

<210> 108
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 108

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Arg Lys Leu His
 20 25 30

Thr Ala

<210> 109
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 109

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
 20 25 30

Thr Ser

<210> 110
 <211> 37

<212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 110

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
 20 25 30

Thr Ala Gly Arg Arg
 35

<210> 111
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 111

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu Lys
 20 25 30

Glu Leu

<210> 112
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 112

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Ala Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
 20 25 30

Thr Ala

<210> 113
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 113

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Ala Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Thr Ala

<210> 114

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 114

Ala Val Ser Glu Ala Gln Leu Leu His Asp Leu Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Ala Leu

<210> 115

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 115

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Arg Leu Leu Glu Arg Leu His
20 25 30

Thr Ala

<210> 116

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 116

Ala	Val	Ser	Glu	His	Gln	Leu	Leu	His	Asp	Arg	Gly	Arg	Ser	Ile	Gln
1				5					10					15	

Asp	Arg	Arg	Arg	Glu	Leu	Leu	Glu	Arg	Leu	Leu	Glu	Arg	Leu	His	Thr
			20					25					30		

Ala

<210> 117

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 117

Ala	Val	Ser	Glu	His	Gln	Leu	Leu	His	Asp	Arg	Gly	Lys	Ser	Ile	Gln
1				5					10					15	

Asp	Leu	Arg	Arg	Arg	Glu	Leu	Leu	Glu	Arg	Leu	Leu	Lys	Arg	Leu	His
			20					25					30		

Thr Ala

<210> 118

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 118

Ala	Val	Ser	Glu	His	Gln	Leu	Leu	His	Asp	Arg	Gly	Arg	Ser	Ile	Gln
1				5					10					15	

Asp	Leu	Arg	Arg	Arg	Glu	Leu	Leu	Glu	Arg	Leu	Leu	Lys	Arg	Leu	His
			20					25					30		

Thr Ala

<210> 119

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 119

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Leu Ala Glu Ala Leu Ala Glu Ala Leu His
 20 25 30

Thr Ala

<210> 120

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 120

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ser Leu Leu Ser Ser Leu Leu Ser Ser Leu His
 20 25 30

Thr Ala

<210> 121

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 121

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu His
 20 25 30

Thr Ala

<210> 122

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 122

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Ala Val Ser Glu Ile Gln Phe Met His Asn Leu Gly Lys His Leu Ser
1 5 10 15

Ser Met Glu Arg Val Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Asn Tyr

<210> 123
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 123

Ala Val Ser Glu Ile Gln Phe Met His Asn Leu Gly Lys His Leu Ser
1 5 10 15

Ser Met Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Asn Tyr

<210> 124
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTH

<400> 124

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Leu Leu Glu Lys Leu Leu Glu Lys
20 25 30

<210> 125
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTH

<400> 125

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Leu Leu Glu Lys Leu Leu Lys Lys
20 25 30

<210> 126
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 126

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Ala Leu Ala Glu Ala Leu Ala Glu Ala
 20 25 30

<210> 127
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 127

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Ser Leu Leu Ser Ser Leu Leu Ser Ser
 20 25 30

<210> 128
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 128

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu His
 20 25 30

Asn Phe

<210> 129
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTH

<400> 129

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Glu
 1 5 10 15

Leu Leu Glu Lys Leu Leu Glu Lys
 20

<210> 130

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTH

<400> 130

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Glu
 1 5 10 15

Leu Leu Glu Lys Leu Leu Lys Lys
 20

<210> 131

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTH

<400> 131

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Ala
 1 5 10 15

Leu Ala Glu Ala Leu Ala Glu Ala
 20

<210> 132

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTH

<400> 132

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Ser
 1 5 10 15

Leu Leu Ser Ser Leu Leu Ser Ser
 20

<210> 133

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTH

<400> 133

Leu Met His Asn Leu Gly Lys His Leu Asn Ser Met Glu Arg Val Ala
 1 5 10 15

Phe Tyr Asp Lys Val Ala Glu Lys
 20

<210> 134

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 134

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys
 20 25 30

<210> 135

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 135

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Lys Lys
 20 25 30

<210> 136

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> modified human PTHrP

<400> 136

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Leu Ala Glu Ala Leu Ala Glu Ala
 20 25 30

<210> 137
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 137

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ser Leu Leu Ser Ser Leu Leu Ser Ser
 20 25 30

<210> 138
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 138

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Phe Tyr Asp Lys Val Ala Glu Lys
 20 25 30

<210> 139
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 139

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Glu
 1 5 10 15

Leu Leu Glu Lys Leu Leu Glu Lys
 20

<210> 140
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 140

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Glu
 1 5 10 15

Leu Leu Glu Lys Leu Leu Lys Lys
20

<210> 141
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 141

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Ala
1 5 10 15

Leu Ala Glu Ala Leu Ala Glu Ala
20

<210> 142
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 142

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Ser
1 5 10 15

Leu Leu Ser Ser Leu Leu Ser Ser
20

<210> 143
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 143

Leu Leu His Asp Lys Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Ala
1 5 10 15

Phe Tyr Asp Lys Val Ala Glu Lys
20

<210> 144
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 144

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Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Arg Lys
20 25 30

<210> 145
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 145

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys
20 25 30

<210> 146
<211> 33
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 146

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys Leu His
20 25 30

Thr

<210> 147
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> modified human PTHrP

<400> 147

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys
20 25 30

<210> 148
<211> 30

<212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 148

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Ala Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys
 20 25 30

<210> 149
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 149

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Ala Glu Leu Leu Glu Lys Leu Leu Glu Lys
 20 25 30

<210> 150
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 150

Ala Val Ser Glu Ala Gln Leu Leu His Asp Leu Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Lys Leu Leu Glu Lys
 20 25 30

<210> 151
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 151

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Arg Leu Leu Glu Arg
 20 25 30

<210> 152
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP
 <400> 152

Ala Val Ser Glu His Gln Leu Leu His Asp Arg Gly Arg Ser Ile Gln
 1 5 10 15

Asp Arg Arg Arg Glu Leu Leu Glu Arg Leu Leu Glu Arg
 20 25

<210> 153
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP
 <400> 153

Ala Val Ser Glu His Gln Leu Leu His Asp Arg Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Arg Leu Leu Lys Arg
 20 25 30

<210> 154
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP
 <400> 154

Ala Val Ser Glu His Gln Leu Leu His Asp Arg Gly Arg Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Glu Leu Leu Glu Arg Leu Leu Lys Arg
 20 25 30

<210> 155
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP
 <400> 155

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Leu Ala Glu Ala Leu Ala Glu Ala
 20 25 30

<210> 156
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 156

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ser Leu Leu Ser Ser Leu Leu Ser Ser
 20 25 30

<210> 157
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 157

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln
 1 5 10 15

Asp Leu Arg Arg Arg Ala Phe Tyr Asp Lys Val Ala Glu Lys
 20 25 30

<210> 158
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 158

Ala Val Ser Glu Ile Gln Phe Met His Asn Leu Gly Lys His Leu Ser
 1 5 10 15

Ser Met Glu Arg Val Glu Leu Leu Glu Lys Leu Leu Glu Lys
 20 25 30

<210> 159
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified human PTHrP

<400> 159

Ala	Val	Ser	Glu	Ile	Gln	Phe	Met	His	Asn	Leu	Gly	Lys	His	Leu	Ser
1				5					10					15	

Ser	Met	Arg	Arg	Arg	Glu	Leu	Leu	Glu	Lys	Leu	Leu	Glu	Lys
			20					25					30

<210> 160

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> TIP39

<400> 160

Ser	Leu	Ala	Leu	Ala	Asp	Asp	Ala	Ala	Phe	Arg	Glu	Arg	Ala	Arg	Leu
1				5					10					15	

Leu	Ala	Ala	Leu	Glu	Arg	Arg	His	Trp	Leu	Asn	Ser	Tyr	Met	His	Lys
			20					25					30		

Leu	Leu	Val	Leu	Asp	Ala	Pro
			35			

<210> 161

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Preferred embodiments - PTH

<220>

<221> misc_feature

<222> (34)..(34)

<223> Optional linker and Fc domain attached at the C-terminus

<400> 161

Ser	Val	Ser	Glu	Ile	Gln	Leu	Met	His	Asn	Leu	Gly	Lys	His	Leu	Asn
1				5					10					15	

Ser	Met	Glu	Arg	Val	Glu	Trp	Leu	Arg	Lys	Lys	Leu	Gln	Asp	Val	His
			20					25					30		

Asn Phe

<210> 162

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Preferred embodiments - PTH

<220>
 <221> misc_feature
 <222> (34)..(34)
 <223> Optional linker and Fc domain attached at the C-terminus

<400> 162

Ser Val Ser Glu Ile Gln Leu Met His Asn Arg Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp Val His
 20 25 30

Asn Phe

<210> 163
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Preferred embodiments - PTH

<220>
 <221> misc_feature
 <222> (34)..(34)
 <223> Optional linker and Fc domain attached at the C-terminus

<400> 163

Ser Val Ser Glu Ile Gln Leu Met His Asn Lys Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp Val His
 20 25 30

Asn Phe

<210> 164
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Preferred embodiments - PTH

<220>
 <221> misc_feature
 <222> (34)..(34)
 <223> Optional linker and Fc domain attached at the C-terminus

<400> 164

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Arg Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp Val His
 20 25 30

Asn Phe

<210> 165
 <211> 31
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Preferred embodiments - PTH
 <220>
 <221> misc_feature
 <222> (31)..(31)
 <223> Optional linker and Fc domain attached at the C-terminus

<400> 165

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp Val
 20 25 30

<210> 166
 <211> 30
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Preferred embodiments - PTH
 <220>
 <221> misc_feature
 <222> (30)..(30)
 <223> Optional linker and Fc domain attached at the C-terminus

<400> 166

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
 1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln Asp
 20 25 30

<210> 167
 <211> 29
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Preferred embodiments - PTH
 <220>
 <221> misc_feature
 <222> (1)..(1)
 <223> Fc domain attached at the N-terminus through optional linker

<400> 167

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu Gln
20 25

<210> 168

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Preferred embodiments - PTH

<220>

<221> misc_feature

<222> (1)..(1)

<223> Fc domain attached at the N-terminus through optional linker

<400> 168

Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Lys Leu
20 25

<210> 169

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Preferred embodiments - PTHrP

<220>

<221> misc_feature

<222> (28)..(28)

<223> Optional linker and Fc domain attached at the C-terminus

<400> 169

Leu Leu His Asn Leu Gly Lys Ser Ile Gln Asp Leu Arg Arg Arg Phe
1 5 10 15

Phe Leu His His Leu Ile Ala Glu Ile His Thr Ala
20 25

<210> 170

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Preferred embodiments - TIP39

<220>

<221> misc_feature

<222> (39)..(39)

<223> Optional linker and Fc domain attached at the C-terminus

<400> 170

Ser	Leu	Ala	Leu	Ala	Asp	Asp	Ala	Ala	Phe	Arg	Glu	Arg	Ala	Arg	Leu
1				5					10					15	

Leu	Ala	Ala	Leu	Glu	Arg	Arg	His	Trp	Leu	Asn	Ser	Tyr	Met	His	Lys
			20					25					30		

Leu	Leu	Val	Leu	Asp	Ala	Pro
			35			